What we claim is:

1. A biodegradable sulfate composition comprising sulfates of an alkyl branched primary alcohol composition having from 8 to 36 carbon atoms, wherein said alcohol composition has an average number of branches per molecule of at least 0.7, and said branching comprises methyl and ethyl branches.

2. The biodegradable sulfate composition of claim 1, wherein the average number of branches per chain ranges from 1.5 to 2.3.

3. The biodegradable sulfate composition of claim 1, wherein said alcohol composition contains less than 5% linear alcohols.

4. The alcohol composition of claim 3, wherein said alcohol composition contains less than 3% linear alcohols.

5. The biodegradable sulfate composition of claim 1, wherein from 5-25% of the number of branches are on the C_2 atoms of the alcohol composition.

6. The biodegradable sulfate composition of claim 5, wherein from 10-20% of the number of branches are on the C_2 atoms of the alcohol composition.

7. The biodegradable sulfate composition of claim 1, wherein from 10-50% of the number of branches are on the C_3 atoms of the alcohol composition.

8. The biodegradable sulfate composition of claim 2, wherein from 15-30% of the number of branches are on the C_3 atoms of the alcohol composition.

9. The biodegradable sulfate composition of claim 8, wherein at least 40% of the branches in the alcohol are methyl branches.

10. The biodegradable sulfate composition of claim 9, wherein at least 50% of the branches are methyl branches.

11. The biodegradable sulfate composition of claim 1, wherein 5% to 30% of the number of branches are ethyl branches.

12. The biodegradable sulfate composition of claim 11, wherein from 10% to 20% of the number of branches are ethyl branches.

13. A branched primary alcohol composition having 8 to 36 carbon atoms, an average number of branches per molecule chain of at least 0.7, less than 0.5 atom% of quaternary carbon atoms, said branching comprising methyl and ethyl branching.

14. The alcohol composition of claim 13, wherein wherein the average number of branches per chain ranges from 1.5 to 2.3.

15. The alcohol composition of claim 14, wherein said alcohol composition contains less than 5% linear alcohols.

16. The alcohol composition of claim 15, wherein said alcohol composition contains less than 3% linear alcohols.

17. The alcohol composition of claim 14, comprising a sulfate of said primary alcohol composition.

18. The alcohol composition of claim 14, wherein from 5-25% of the number of branches are on the C_2 atoms of the alcohol composition.

19. The alcohol composition of claim 18, wherein from 10-20% of the number of branches are on the C_2 atoms of the alcohol composition.

20. The alcohol composition of claim 14, wherein from 10-50% of the number of branches are on the C_3 atoms of the alcohol composition.

21. The alcohol composition of claim 20, wherein from 15-30% of the number of branches are on the C_3 atoms of the alcohol composition.

22. The alcohol composition of claim 14, wherein at least 40% of the branches in the alcohol are methyl branches.

23. The alcohol composition of claim 22, wherein at least 50% of the branches are methyl branches.

24. The alcohol composition of claim 13, wherein 5% to 30% of the branches are ethyl branches.

25. The alcohol composition of claim 24, wherein from 10% to 20% of the branches are ethyl branches.

26. The alcohol composition of claim 13, comprising an ethoxysulfate of said primary alcohol composition.

27. A branched primary alcohol composition comprising skeletally isomerized olefins converted to primary alcohols.

28. The alcohol composition of claim 27, wherein the composition comprises at least 75 wt.% of alcohol molecules having from 11 to 19 carbon atoms.

29 The alcohol composition of claim 27, wherein the average number of branches per alcohol chain is at least 0.7.

30. The alcohol composition of claim 29, wherein the average number of branches per alcohol chain ranges is at least 1.5.

31. The alcohol composition of claim 30, wherein said composition comprises from 5% to 30% ethyl branching.

32. The alcohol composition of claim 27, wherein the skeletally isomerized olefins comprise isopropyl termination types of branches in an amount of at least 5%.

33. The alcohol composition of claim 27, wherein the composition comprises ethyl branching.

34 The alcohol composition of claim 33, comprising from 5% to 30% ethyl branching.

35. The alcohol composition of claim 30, wherein the composition comprises branching at the C_3 position of the olefins in an amount of 5% to 30%.

36. The alcohol composition of claim 27, comprising a sulfate of said primary alcohol composition.

37. The alcohol composition of claim 27, comprising an ethoxysulfate of said primary alcohol composition.

38. The alcohol composition of claim 27, comprising an oxyalkylate of said primary alcohol composition.

39. The alcohol composition of claim 30, wherein the branches comprise methyl branches numbering at least 40% of the overall branching.

40. The alcohol composition of claim 27, wherein the branches comprise from 5% to 30% ethyl branches.

41. A process for making a branched primary alcohol composition, comprising:

a) contacting an olefin feed comprising linear olefins having at least 7 carbon atoms with a catalyst effective for skeletally isomerizing said linear olefin to yield a skeletally isomerized olefins; and

b) converting said skeletally isomerized olefin to said primary alcohol composition.

42. The process of claim 41, wherein said primary alcohol composition comprises has an average number of branches per alcohol chain of at least 1.8.

43. The process of claim 42, wherein said conversion comprises a hydroformylating the skeletally isomerized olefin.

44. The process of claim 41, wherein said catalyst comprises a molecular sieve having at least one channel with a crystallographic free diameter along the x and/or y planes of the [001] view ranging from greater than 4.2 Å and less than 7 Å, and said conversion is by hydroformylation.

45 The process of claim 44, wherein said catalyst comprises a zeolite having a ferrierite isotypic structure.

46. The process of claim 45, wherein said catalyst comprises an H-ferrierite.

47. The process of claim 44, wherein the catalyst has an elliptical pore size large enough to permit entry of a linear olefin and diffusion of a methyl branched isoolefin and small enough to retard coke formation.

48. The process of claim 47, wherein the catalyst is combined with an alumina-containing binder.

49. The process of claim 48, wherein the catalyst is further combined with an acid comprising a monocarboxylic acid, an inorganic acid, or mixtures thereof.

50. The process of claim 41, wherein said saturated branched alcohol is sulfated to produce a sulfated branched alcohol which is biodegradable.

51. The process of claim 41, wherein said saturated branched alcohol is reacted with an oxirane compound to produce an oxyalkylated branched alcohol.

52. The process of claim 51, comprising further sulfating said oxyalkylated branched alcohol.

53. A detergent composition comprising:

a) a surfactant comprising a biodegradable sulfate composition comprising sulfates of an alkyl branched primary alcohol composition having at least 8 carbon atoms, wherein said alcohol composition has an average number of branches per molecule chain of at least 0.7, said branching comprising methyl and ethyl branches;

b) a builder;

c) and optionally foam controlling agents, enzymes, bleaching agents, bleach activators, optical brighteners, cobuilders, hydrotropes, stabilizers, or mixtures thereof.

54. The detergent composition of claim 53, comprising a granular laundry detergent.

55. The detergent composition of claim 53, comprising a liquid laundry detergent.

56. The detergent composition of claim 53, comprising a liquid dishwashing detergent.

57. The detergent composition of claim 53, comprising a liquid soaps, a shampoo, or a scouring agent.

58. The detergent composition of claim 53, wherein the composition contains from 5 and 35% by weight of the builder.

59. The detergent composition of claim 53, wherein said composition is free of phosphate containing builder.

60. The detergent composition of claim 59, wherein said builder comprises alkali metal carbonates, silicates, sulfates, polycarboxylates, aminocarboxylates, nitrilotriacetates, hydroxycarboxylates, citrates, succinates, substituted and unsubstituted alkanedi- and polycarboxylic acids, complex aluminosilicates, or mixtures thereof.

61. The detergent composition of claim 53, containing a bleaching agent comprising a perborates, percarbonates, persulfates, organic peroxy acids, or a mixture thereof.

62. The detergent composition of claim 53, containing a bleach activator comprising carboxylic acid amides, substituted carboxylic acids, or mixtures thereof.

63. The detergent composition of claim 53, containing a hydrotrope comprising an alkali metal salts of aromatic sulfonic acids or alkyl carboxylic acids, alkali metal chlorides, urea, mono- or polyalkanolamines, or mixtures thereof.

64. The detergent composition of claim 53, wherein said surfactant contains less than 0.5 atom% of quarternary carbon atoms.

65. The detergent composition of claim 53, wherein said surfactant contains at least 5% isopropyl termination.

66. The detergent composition of claim 53, wherein said surfactant contains at least 40% methyl branching, based on the overall branching present.

67. The detergent composition of claim 53, wherein said surfactant contains ethyl branching in an amount of at 5% to 30%.

68. The detergent composition of claim 53, wherein the surfactant contains 5 to 30 % of branching at the C_3 position.

69. The detergent composition of claim 53, wherein the surfactant contains a higher concentration of branches at the C_2 and C_3 ends of the carbon molecule than the number of branches found at the C_4 or longer positions from both ends of the molecule proceeding inward towards the center.